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09/658,241	09/08/2000	Donald L. Hohnstein	1822/USW0601PUS	3022

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EXAMINER	
TRINH, TAN H	
ART UNIT	**PAPER NUMBER**
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/658,241	HOHNSTEIN ET AL.	
	Examiner	Art Unit	
	TAN TRINH	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19,22-29 and 31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19,22-29 and 31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 September 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4, 6-19, 22-28 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (U.S. Pub. No. 2003/0195017) in view of Proctor (U. S. Pub. No. 2001/0031648).

Regarding to claims 1, 11 and 31, Chen teaches a wireless communication system (see fig. 1A) comprising: a plurality of access points (see fig. 1A, base station 102 and 118N to other Base Stations), each access point (102) having at least one omnidirectional antenna (120 and 324) forming a substantially uniform coverage area around the access point (102) (see fig. 1A-B, 3B, base stations 102A-B, omnidirectional antenna (120 and 120A or 324), page 2, section [0019], and page 4-5, sections [0051-0052], and page 7, section [0076] for omnidirectional antenna); and a plurality of subscriber units (108A-B) (see fig. 1A), each subscriber unit having at least one omnidirectional antenna forming a omnidirectional directional beam coverage area (fig. 1A-B, the mobile 108A-B antennas are omnidirectional); wherein each subscriber unit (108) communicates with a particular access point (102) through transmissions between the subscriber unit omni-directional antenna for the particular access point (102A-B) (see figs. 1B, page 5, sections [0052 and 0055] and page 7, section [0078]). In this case, the BS 102 communication with MS 108 is using the Omnidirectional antennas 120 or 324 or directional antenna 104. Chen teaches the subscriber unit (mobile station 108) having at least one omnidirectional antenna (standard mobile cellular communication network in which mobile antennas are omnidirectional)

omnidirectional antenna forming a directional coverage area (see page 5, section [0055]). But Chen does not mention each mobile subscriber unit having at least one directional antenna forming a directional coverage area and the directional coverage area selectable from a plurality of directional coverage areas provided by the subscriber unit.

However, Proctor teaches each mobile subscriber unit (60-1 and 60-3) arrangements to incorporated Array directional antennas having at least one directional antenna forming a directional coverage area and the directional coverage area selectable from a plurality of directional coverage areas provided by the subscriber unit (mobile units 60) (see fig. 1, mobile subscriber unit (60-1 - 60-3), page 4, section [0032]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Chen with Proctor, in order to reduces the effects of interference and multipath fading for mobile subscriber unit (see suggested by Proctor in page 4, section [0032], lines 14-15).

Note: *See Smith US Patent No. 6,405,044 teaches some mobile subscriber unit arrangements to incorporated directional antennas having at least one directional antenna forming a directional coverage area (14) (see fig. 1, col. 4, lines 35-39)),*

See Kuwahara (U.S. Patent No. 6,141,335) teaches the BS with directional antennas 17 and omnidirectional antenna 11 (see fig. 4).

Regarding to claim 14, Chen teaches a method of wireless communication (see fig. 1A), comprising: the transmitting downlink information in a substantially uniform coverage area

around each of a plurality of access points (102A-B) (see fig. 1A-B, base station 102 and 118N to other Base Stations, downlink information 110A-B), receiving the downlink information at a subscriber unit (108) (see fig. 1A-B,page 4, section [0042]). In this case, the subscriber unit (108) is receiving information from AP (BS 102). Transmitting uplink information in a coverage area from the subscriber unit (see fig. 1A-B, page 5, section [0055]); and receiving the uplink information at one of the access points (Fig. 1A-B, page 5, section [0055], and page 7, section [0078]); Routing information between the plurality of the access points (102A and 102B) and sending the information to an access point (102 A-B) in communication with the distribution point (114 and 116) (see fig. 1A-B and 5, page 8, section [0093]), if the information is destined for a subscriber unit in communication with the access (see page 8, sections [0093-0094]), Chen inherently teaches; otherwise forwarding information to another distribution point (116) in communication with the distribution point (114) (see fig. 5 page 8, sections [0093-0094]). In this case, the multi-subscriber station exchange user data with network 116 (distribution point 116), That is obvious to the otherwise forwarding information to another. But does not mention mobile subscriber unit transmitting uplink information in focused a coverage area.

However, Proctor teaches each mobile subscriber unit (60-1 and 60-3) arrangements to incorporated Array directional antennas having at least one directional antenna forming a directional transmitting uplink information in focused coverage area (see fig. 1, mobile subscriber unit (60-1 - 60-3), page 4, section [0032]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Chen with Proctor, in order to reduces the

effects of interference and multipath fading for mobile subscriber unit (see suggested by Proctor in page 4, section [0032], lines 14-15).

Regarding to claim 2, Chen teaches a routing network (114) interconnecting the plurality of access points (102A-B) (see Fig. 1B, routing network (114) interconnecting base stations 102A-B, page 5, sections [0054-0055]).

Regarding to claim 3, Chen inherently teaches the routing network (114) comprises a distributed network of distribution points (102A-B) (see fig. 1B,). In this case, the BSC contain the routing network and BTS is distribution points rout voice and data to the mobile user.

Regarding to claims 4 and 24, Chen teaches the distribution point (102A-B is in the same location as one access point (102A-B) (see fig. 1A-B, distribution point 102A-B and access point 102A-B). In this case, the distribution point same location as AP point, since it routes the call to user.

Regarding to claims 6 and 19, Chen teaches the transmissions between the subscriber unit (108) and the access point (102) comprise packet information (see fig. 1A-B, page 3, section [0038]). In this case, the data traffic and the internet protocol packet is packet information.

Regarding to claim 7, Proctor teaches the subscriber unit (60) is communication to a terminal network controller (160) (see fig. 1) comprising, at least one interface (100), each

interface providing access to the wireless communication system (160) (see fig. 1, page 4, sections [0032-0033).

Regarding to claim 8, Chen teaches the terminal network controller (BSC-114) further comprises a routing switch routing information packets to and from the at least one interface (504 IWF) (see fig. 5, page 8-9, sections [0093-0094]).

Regarding to claims 9 and 17, Chen inherently teaches the directional antenna (104) comprises a plurality of antenna patches (see fig. 1A, directional antenna (104)), the subscriber unit (108A) selecting (referred to as active) at least one antenna patch (110) as the directional antenna (104) (see fig. 1A, page 3, section [0039]). In this case, the subscriber unit (108A) referred to as active when a call or traffic channel exists between at one antenna patch (110) as the directional antenna (104).

Regarding to claim 10, Proctor teaches the directional antenna (100) is operative to be positioned to optimize transmissions between the subscriber unit (60) and the particular access point (160) (see fig. 1, page 3, section [0029]).

Regarding to claim 12, Chen teaches at least one access point (102) has both at least one omnidirectional antenna (120) and at least one directional antenna (104) (see figs. 1A, 3B omnidirectional antenna 120, and directional antenna 104, omnidirectional antenna (120 and

120A or 324), page 2, section [0019], and page 4-5, sections [0051-0052], and page 7, section [0076]).

Regarding to claims 13 and 28, Chen teaches wherein access points transmit from omnidirectional antennas (120 or 324) at a first frequency and from directional antennas (104) at a second frequency different than the first frequency (see figs. 1A, page 7, section [0078]). In this case, using the omnidirectional antennas to transmit voice traffic and using directional antennas to transit data traffic, so that the frequency is different and different channels.

Regarding to claim 15, Chen teaches wherein the transmitting in the substantially uniform coverage area around each of the access points (102A-B) (see fig. 1A-B) comprises transmitting from an omnidirectional antenna (120 and 324) and receiving the uplink information comprises receiving at the omnidirectional antenna (120 and 324) (see fig. 1A-B, 3B, page 7, section [0076-0078]). In this case, the communication using the omnidirectional antenna with omnidirectional cell and also in broadcast communication transmitted and received is using the omnidirectional antenna 324 through the communication apparatus 326.

Regarding to claim 16, Proctor teaches the transmitting in a focused coverage area comprises transmitting from a directional antenna (100) and receiving the downlink information comprises receiving at the directional antenna (100) (see fig. 1,page 4, section [0032]). In this case, the mobile unit 60 is using directional antenna (100) for transmit and receives on signal 71-73.

Regarding to claim 18, a method of wireless communication as in claim 16 further comprising aiming the directional antenna to improve receiving the downlink information. (This is a well known, since the antenna has to point and aim on the direction of the antenna pointing the cover area to improve the receiving downlink information).

Regarding to claim 22, Chen teaches wherein routing information comprises transmitting the information between each access point (102A-B) and one of a plurality of distribution points (114) (see fig. 1A-B, page 7, sections [0082-0083]).

Regarding to claim 23, Chen teaches the transmitting the information comprises wireless transmission (see fig. 1 A-B, and Abstract, lines 1-2 for wireless communications).

Regarding to claim 25, Proctor teaches the routing the downlink information (71-73) to one of a plurality of interfaces (100) at the subscriber unit (60-1 – 60-3) (see fig. 1-2, page 4, sections [0032-0033]).

Regarding to claim 26, Chen teaches the transmitting downlink information in a focused coverage area around each of a plurality of access points (102A-B) receiving the downlink information at a subscriber unit (108) (see fig. 1A); transmitting uplink information from a substantially uniform coverage area (102) around the subscriber unit (108) (see fig. 1A-B); and receiving the uplink information at one of the access points (102) (see fig. 1A-B, page 5, sections

[0055-0056]). In this case, the mobile 108 is send sweep beam to respective area and transmitting downlink information in a focused coverage area by the BS 102 with antenna 104, see fig. 1A.

Regarding to claim 27, Chen teaches at least one access point (102), both transmits downlink information in a focused coverage area and transmits downlink information in a substantially uniform coverage area (figs. 1A, the antenna 104 is downlink pattern 106 and single beam 110 within focused coverage area, page 3, section [0039]).

3. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kumaki (U. S. Patent No. 6,473,411) in view of Allen (U.S. Patent No. 7,185,097).

Regarding to claim 29, Kumaki teaches a plurality of access points (202-203, 210, 211-212) (see fig. 4-5), each access point transmitting and receiving information packets (see fig. 4, 7-15, col. 4, lines 39-57, col. 10, lines 49-67), each information packet transmitted over a substantially uniform coverage area around the access point (202-203, 210-212) (see fig. 4-5, 7-15, 7-15, col. 4, lines 39-57, col. 10, lines 49-67). In this case, information packet transmitted inherently substantially uniform by the mobile terminal 201 and 227. A network of distribution points (GW, MRSR, Server, BTS) in communication with the access points the distribution points (see fig. 5, 9 and 46-52, col. 10, lines 49-67, col. 73, lines 66-col. 74, lines 3, col. 75, lines 10-31), and a plurality of subscriber units (201 and 227) (see fig. 5), subscriber units in area each subscriber unit (201 and 227) transmitting and receiving information packets (see fig. 5,col. 10, lines 49-67) transmitting and receiving link each subscriber unit (201 and 227) transmitting

information packets over a focused directional coverage area (202-203, 210-212) (see fig. 5, col. 10, lines 49-67); Kumaki teaches the routing information between (mobile terminal 201s and 227) with the access points (BTS 202-203, 210-212), MCN 226, MSR 220-221, GW 223, Internet 224 and to IP terminal 225, with cellular network and IP network (see fig. 5 for routing information). But Kumaki does not mention the routing information packets between the access points and the forwarding equivalence Class (FEC).

However, Allen teaches routing information packets between the access points and the forwarding equivalence Class (FEC) (see fig. 5, col. 18, lines 40-57).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Kumaki with Allen, in order to provide user a higher-layer packet depend on the configuration of the router or distribution points, and destination IP address with the Quality of service class is often used.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (U.S. Pub. No. 2003/0195017) in view of Proctor (U. S. Pub. No. 2001/0031648) further in view of Komara (U.S. Patent No. 6690662).

Regarding to claim 5. Chen teaches wherein at least one access point (102) is in wireless communication with the routing network (114) through wireless network backbone (304) (see fig. 1A-B and 3). But Chen or Proctor fails to teach backhaul antenna.

However, Kimara teaches wireless communication with the routing network through backhaul antenna (see figs. 3 and 4, backhaul antenna 330 or 330-N-12, col. 6, lines 36-57).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching Chen and Proctor with Kimara, in order to provide user to routing data through wireless network backbone with backhaul antenna.

Response to Arguments

5. Applicant's arguments with respect to claims 1-4, 6-19, 22-29 and 31 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(571) 273-8300, (for Technology Center 2600 only)

*Hand-delivered responses should be brought to the Customer Service Window (now located at the **Randolph Building, 401 Dulany Street, Alexandria, VA 22314).***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan Trinh whose telephone number is (571) 272-7888. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor, Anderson, Matthew D., can be reached at (571) 272-4177.

The fax phone number for the organization where this application or proceeding is assigned is **(571) 273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Technology Center 2600 Customer Service Office** whose telephone number is **(703) 306-0377**.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tan H. Trinh
Division 2618
February 4, 2008

PATENT EXAMINER
TRINH,TAN